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CHEMICAL & ENGINEERING

NEWS

Mergers change face of flavors and fragrances industry
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Biotechnology

Major new pharmaceuticals on verge of commercialization
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News Focus

In the emerging biotechnology industry, a number of health care products already have been brought to market, and many more products are on the way—some with potential annual sales in the hundreds of millions of dollars. **Page 11**

Flavors and Fragrances Industry Taking On New Look

International mergers and acquisitions have produced new firms that have broader product lines and that are challenging industry leader

Patricia L. Layman, C&EN London

Some things never seem to change in the flavors and fragrances industry. Vanilla continues to be the world's most popular single flavor. Many fine fragrances are launched with great ballyhoo, but only a handful become successful. And India and China continue to loom as a great "sleeping giant" of a market, just waiting to wake and develop.

However, changes are occurring in the industry. Changes are happening in geographical activity, and in the trend of strictly chemical producers becoming more involved supplying raw materials. But most significant over the past several years has been the spate of mergers and acquisitions that are changing the face of the industry.

Observes Hans U. Daeniker, consultant with SRI International in Zurich, for example, a number of international mergers and acquisitions have taken place since SRI published his first report on flavors and fragrances in 1984. The leading merger in that year starred the same major player—Unilever's PPF International (C&EN, July 30, 1984, page 7)—as it does now.

At that time, the world's fifth largest flavors and fragrances supplier, PPF International, based in the U.K., announced that it was acquiring the 10th largest producer, Norda of the U.S. That deal made the combination a potent number three in the marketplace.

PPF has jumped back into the merger news, joining forces with Dutch producer Naarden International, in a venture called Quest International (C&EN, July 6, page 16). The combination is now the second largest supplier worldwide, challenging hard the market leader International Flavors & Fragrances, of New York City.

"PPF is determined to fuse this together, even giving it the new name Quest," says Daeniker, who has just completed a revised report on the industry for SRI. "When it bought Norda, it gave the company a better holding in the U.S., and I thought it a good move. But now, it adds Naarden, which has almost doubled [its size.] It is now clearly number two in the world."

Although the PPF-Naarden merger was the most spectacular for the industry, it has not been the only one. For example, U.K.-based Pauls Flavours & Fragrances (the old Pauls & White's Co.), a subsidiary of the Pauls holding company, last September merged with U.S.-based Felton International. The new company is named Felton Worldwide.

Pauls was mainly in the snack flavorings business, and was certainly smaller than Felton. Felton gave Pauls strength in the U.S. and a broadened product line, as well as the R&D resources to pursue its work in templar essential oils, extracting natural materials with supercritical gases such as liquid carbon dioxide.

Companies in other countries also are actively acquiring, merging, or consolidating. Daeniker notes that in France, in Grasse, the historical center of the industry that has seen good fortune slip away, those companies that have survived "are waking up. The French companies that used to be primarily essential oils and fragrances suppliers are becoming very active in the U.S., and

Top 15 firms share half the world market

Company/parent	Headquarters	Sales ($ million)	% of world total
International Flavors & Fragrances	U.S.	$ 522.5	9.5%
Quest International[a] (Unilever)	U.K., Netherlands	396.0	7.2
Givaudan (Hoffmann-La Roche)	Switzerland	319.0	5.8
Firmenich	Switzerland	236.5	4.3
Haarmann & Reimer (Bayer)	West Germany	176.0	3.2
Fritzsche Dodge & Olcott (BASF)	U.S.	148.5	2.7
Bush Boake Allen (Union Camp)	U.K., U.S.	137.5	2.5
Florasynth-Lautier	U.S.	137.5	2.5
Takasago Perfumery	Japan	121.0	2.2
Dragoco Gerberding	West Germany	104.5	1.9
Universal Group (Universal Foods)	U.S.	99.0	1.8
Felton Worldwide[a] (Pauls plc)	U.K., U.S.	99.0	1.8
PFW Division (Hercules)	U.S.	88.0	1.6
Roure Bertrand Dupont (Hoffmann-La Roche)	France	88.0	1.6
T. Hasegawa	Japan	82.5	1.5
TOTAL		$2756.5	50.1%

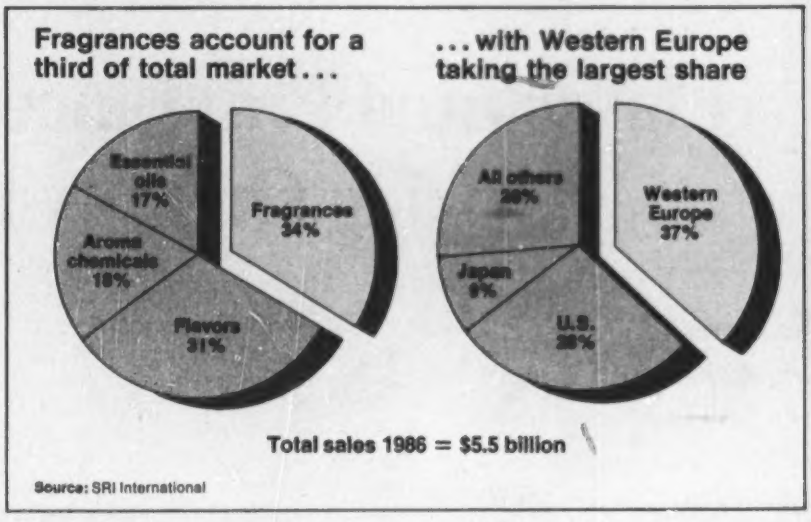
[a] Formerly PPF/Naarden. b Formerly Pauls/Felton. Sources: SRI International, C&EN estimates

are becoming very active in flavors. It is the proper thing to do if they want to become a prominent house."

More and more, he adds, a prominent supplier must be active in at least several of the four major product categories that make up the industry: essential oils and other natural products, aroma chemicals, fragrance compositions, and flavor compositions.

The first two categories primarily provide raw materials for the last two, used by the flavors and fragrances customer to impart odor or aroma to its consumer products. However, essential oils per se also are used as fragrances and, in some cases, aroma chemicals may be applied as such (for example, vanillin and menthol). Most big flavors and fragrances companies are involved in all four categories.

Worldwide sales of flavors and fragrances in 1985 were $5.26 billion. Of those sales, 18% were in aroma chemicals, 17% in essential oils and other natural products, 34% in fragrance compositions, and 31% in flavor compositions, according to the new SRI report. The total probably grew about 3 to 5% in constant dollars to about $5.5 billion last year. Western Europe accounts for 37% of total worldwide sales, followed by the U.S. at 28%, Japan 9%, Latin America 8%, Eastern Europe about 5%, and all the other countries and regions 13%.



It is a disparate industry. At least 1000 flavors and fragrances companies operate worldwide, and of these, 350 to 400 have major importance. Fifteen multinational companies share about half the worldwide market.

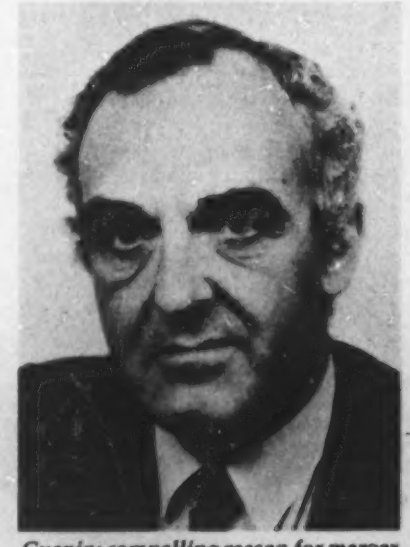
The profitability of the industry used to be very interesting, Daeniker says, "and still is today, but only for a few companies. Many companies show only an average financial performance, and a few are even in difficulties. Good earnings have to be fought for, as in any other specialty chemical industry."

An effort to improve worldwide strength, for example, was one of the factors influencing PPF to seek a merger with Naarden—worldwide coverage, and strength from sheer size.

For Jean-Pierre Guepin, the chairman of newly formed Quest International, there was a very compelling reason for combining Naarden and PPF. "Until about a year ago," he says, "both companies had independently grown to their existing individual sizes. Naarden and PPF had been growing faster than the market, and we had reached an equal size—probably too small to survive in an environment that was growing more and more competitive."

Now, he says, "The world will not be able to sidestep Quest International," with its group gross sales in 1986 of about $600 million.

Charles Miller Smith, corporate president, says that "during the preparations of this merger, we acted as if Quest International already had existed for many years. Both organizations have been active in the same marketplace, but there were differences. We analyzed our assets and realized that together we will



Guepin: compelling reason for merger

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Moreover, he adds, "In size, we are almost the largest business in the industry at this moment." His ultimate goal: "In a few years, we will have established Quest as a leading force—and by the 1990s premier within the industry of fragrances, flavors, and food ingredients."

The current holder of that position, IFF, won't let go easily, predicts Daeniker, who believes that the most remarkable company in the industry "continues to be IFF. It is the uncontested leader in nearly all continents, although PPF is larger in flavors in Europe. And, in terms of profits, IFF is on top, with 14 to 15% net earnings to sales for the past 10 years."

IFF, he believes, owes part of its strength to its pioneering spirit. "The people there take up new ideas and do things with them. For example, they have an active program with research into sex related to odor. There is a relation; they are investigating beyond the nonsense written. IFF is also looking at the relation between foods and flavors, with regard to the hunger situation in the Third World, and at fragrances in plastics, now a small business, $20 million to $30 million worldwide."

Smith: almost the largest business

Daeniker also cites another more subtle but critical reason IFF has done so well—"excellent and long-lasting leadership. There is a continuity in senior management, [which is] very important because relations between customer and producer are so important. It is also very important because it leads to more stable policies—more continuity."

As for the other major companies in the industry, he sees Firmenich, based in Switzerland, and the U.S.-French company Florasynth-Lautier as the big leaders in fine fragrances. He finds Firmenich a particularly interesting company. "The people there are happy. Profits are good. This impresses me—it is a good company. And Florasynth is tremendously successful."

On the other hand, Daeniker be-

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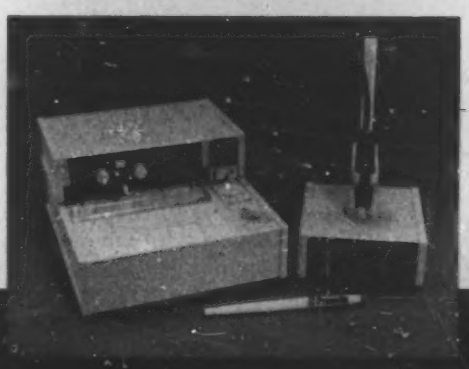

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lieves that Switzerland's Givaudan "could be better if it were more aggressive, and more stable in personnel. It has had six top managers in 25 years. In the flavors and fragrances industry, this is not good."

China is increasing its share in raw materials—essential oils, and now, chemicals as well. Taiwan and South Korea also are coming up. The other Asian countries, especially Indonesia, are waiting around the corner. In 15 to 20 years, "these countries will have an important share of the essential oils and raw materials market," Daeniker predicts.

As it stands, the U.S. is the leading supplier of essential oils, followed by China and Brazil. Eastern Europe supplies about $25 million of essential oils each year to the West.

The 23 largest companies in the industry supply roughly two thirds of the fragrance and flavor composition market, but only one third of all essential oils and aroma chemicals. The remaining essential oils are supplied by small companies and brokers.

The aroma chemicals business, on the other hand, is increasingly like any other chemical business, with commodity items and specialty products. Most aroma chemicals are still supplied by flavors and fragrances companies, both large and small. But a significant proportion, one third, of the business has been snatched away by the big chemical producers, such as Rhône-Poulenc (with the vanillin operations of Monsanto) and BASF.

The worldwide market for flavors and fragrances will continue its modest growth, probably 3 to 5% per year, in constant dollars, the SRI report predicts. Nevertheless Daeniker concedes, some in the industry are worried about such nagging questions as whether "everything should be flavored." However, he says, "There is a true justification for fragrances and flavors. Not that they are necessary—first come the basic necessities, then come the nice things in life. And for that, fragrances and flavors are essential. They are almost so important for the quality of life that they are an essential. You can survive without them—but it's no fun!" □

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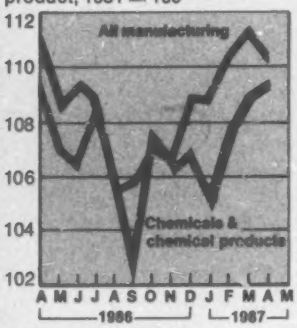
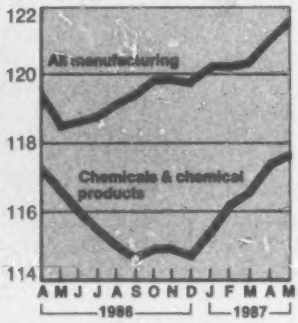
Fertilizer dulls bright Canadian chemicals performance

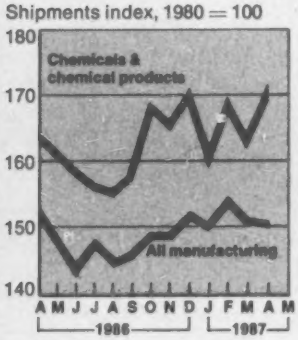
Volume index, gross domestic product, 1981 = 100



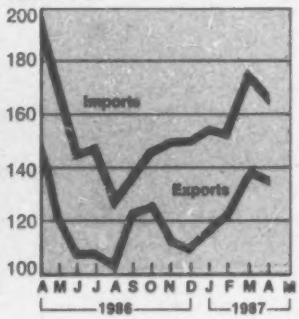
Industry selling price index, 1981 = 100



Shipments index, 1980 = 100



Chemical trade index, 1981 = 100



Note: 1981 = 100. **Source:** Statistics Canada

Fertilizer chemicals are hurting most

Production, thousands of metric tons	1986	First four months 1987	First four months 1986	% change 1986–87
ORGANICS				
Ethylene	1909	706	655	7.8%
Propylene	628	210	214	−1.9
Benzene	635	257	212	21.2
Toluene	393	142	120	18.3
Xylene	356	116	119	−2.5
PLASTICS				
Polyethylene, low density	887	318	282	12.8
Polyethylene, high density	242	86	80	7.5
Polyesters, unsaturated	37	15	12	25.0
INORGANICS				
Hydrochloric acid	153	53	54	−1.9
Nitric acid	1024	363	394	−7.9
Phosphoric acid[a]	547	180	239	−24.7
Sulfuric acid	3536	1313	1390	−5.5
Ammonia, anhydrous	3540	1202	1310	−5.5
Ammonium phosphate	1149	378	498	−24.1
Chlorine	1536	549	490	12.0
Sodium hydroxide	1696	600	532	12.8

a 100% P_2O_5. **Source:** Statistics Canada

For the Canadian chemical industry, the year so far has been very good—or very poor. It all depends upon what segment of the industry is being talked about. In petrochemicals, ethylene output continues to set new records, as derivative products such as polyethylene continue to score hefty gains.

This year, the Canadian pulp and paper industry is staging a strong recovery. This, in turn, has spurred domestic demand for pulping, bleaching, and papermaking chemicals.

But fertilizer producers, and the companies that make the chemicals that go into fertilizers, haven't been so lucky. Like most of their counterparts in other countries, worldwide overcapacity and a world grain surplus are taking their toll on the Canadian fertilizer industry.

Ethylene production, up almost 8% through the first four months of this year, is drawing its strength from a charged-up Canadian plastics industry, which almost certainly will chalk up another record year in 1987. In fact, the plastics and resins industry has been among the fastest-growing industries in Canada for the past several years. Based on four-month data, the latest available from Statistics Canada, low-density polyethylene output is running 13% ahead of last year's pace. Production of its cousin, high-density polyethylene, is up 7.5%.

Statistics Canada no longer publishes production data for polyvinyl chloride or polystyrene. But all signs indicate that demand for these two ethylene-consuming polymers also is growing. Demand for polystyrene in packaging is particularly heavy. As a result, supply of both polystyrene and styrene is tight in Canada. Prices of both the polymer and monomer have increased rapidly so far this year.

PVC producers are benefiting from a strong housing and construction market in Canada. But they have to share some of their good fortune with imported material. On the other hand, polyethylene producers are enjoying a strong export market. They now export about half of their output, most of it linear low-density polyethylene.

On the inorganics side, a 12% increase in four-month chlorine production reflects not only higher PVC output but a booming Canadian pulp and paper industry. Pulp and paper mills have boosted shipments and pared down inventories. Operating rates in the industry are close to 100%.

However, Canadian fertilizer producers are hurting. Markets remain weak for most of their major products. Prices are also weak and, although some new plants have started up, the situation has forced producers to shut down other units.

The statistics make dismal reading. Ammonia output, down 5.5% in the first four months. Ammonium phosphate, down 24% in the same period. Phosphoric acid, down 25%. Urea production is barely holding its own.

Earl Anderson, New York